

Amendment and Response

Applicant: Thomas et al.

Serial No.: 10/519,444

Filed: August 26, 2005

Docket No.: I431.123.101/FIN393PCT

Title: ELECTRONIC COMPONENT WITH MULTILAYERED REWIRING PLATE AND METHOD FOR PRODUCING THE SAME

IN THE CLAIMS

Please amend claims 28, 32, 34-40, 42, 43, and 55 as follows:

1-27. (Cancelled)

28. (Currently Amended) An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the shielding layer has a plurality of stacked shielding films laminated one on top of the other.

29. (Previously presented) The electronic component of claim 28, comprising wherein the circuit chip has magnetic memory cells.

30. (Previously presented) The electronic component of claim 28, comprising wherein the circuit chip is a logic chip.

31. (Previously presented) The electronic component of claim 28, comprising wherein the shielding layer is a patterned shielding film having a thickness of between 20 and 75 micrometers.

32. (Currently Amended) The electronic component of ~~claim 28~~claim 32, comprising wherein the shielding layer has a plurality of stacked shielding films laminated one on top of the other.

33. (Previously presented) The electronic component of claim 28, comprising wherein the

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amorphous metal comprises a cobalt or cobalt alloy.

34. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the amorphous metal comprises a boron/iron alloy.

35. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the amorphous metal has a saturation induction of between 0.5 and 1 tesla.

36. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the amorphous metal has a saturation magnetostriction of less than 0.2×10^{-6} .

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37. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the amorphous metal has a Curie point of between 200°C and 500°C.

38. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the patterned shielding layer is arranged on the outer side of the rewiring plate, which is opposite to the circuit chip, the shielding film having at least openings for external contacts arranged in a predetermined pitch annularly or in a matrix.

39. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the patterned shielding layer of the rewiring plate of a memory chip has at least one bonding channel opening.

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40. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the patterned shielding layer is arranged on the chip side of the rewiring plate and has at least openings for bonding contact areas.

41. (Previously presented) The electronic component of claim 28, comprising wherein the circuit chip has a shielding film on its rear side.

42. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the circuit chip has a patterned shielding film on its active front side, in which shielding film at least openings for the contact areas of the circuit chips are provided.

43. (Currently Amended) ~~The electronic component of claim 28, comprising~~ An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate connects contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an

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amorphous metal alloy, wherein the shielding layer on the rewiring plate has at least a shielding factor of between 50 and 100.

44. (Previously Presented) A method for producing an electronic component comprising:
defining the electronic component to include a multilayered rewiring plate, which carries at least one circuit chip and connects contact areas of the circuit chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy[[:]];
patterning of a shielding film made of amorphous metal or an amorphous metal alloy for a panel with a plurality of component positions;
laminating the patterned shielding film onto the rewiring plate of the panel;
applying and electrical connecting of circuit chips in the component positions of the rewiring plate of the panel;
applying a plastic housing composition to the panel embedding the circuit chips and the electrical connections;
applying external contacts in the component positions of the panel; and
singulating the component positions of the panel to form individual electronic components.
45. (Previously Presented) The method of claim 44, comprising:
stamping predetermined patterns of openings to define the patterning of the shielding films.
46. (Previously Presented) The method of claim 44, comprising:
using laser removal to pattern the shielding films.
47. (Previously Presented) The method of claim 44, comprising patterning of the shielding films by etching methods through an etching mask.

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48. (Previously Presented) The method of claim 44 comprising:
prior to the application of the circuit chips to the chip side of the rewiring plate, which carries the circuit chips, the patterned shielding film is laminated on, leaving the areas provided for the bonding connections free.
49. (Previously Presented) The method according of claim 44, comprising laminating the patterned shielding film onto the outer side of the rewiring plate, which carries the external contacts, with the areas provided for the external contacts being left free.
50. (Previously Presented) The method according to one of claims 44, comprising:
in the component positions of the panel, applying the circuit chips with magnetic memory cells to the rewiring plate.
51. (Previously Presented) The method of claim 44, comprising:
in the component positions of the panel, applying circuit chips with logic circuits to the rewiring plate.
52. (Previously Presented) The method of claim 44, comprising:
laminating a plurality of patterned shielding films one on top of the other.
53. (Previously Presented) The method of claim 44, comprising:
applying shielding films on the rear sides of the circuit chips, prior to the application of the circuit chips to the rewiring plate.
54. (Previously Presented) The method of claim 44, comprising:
applying patterned shielding films on the active front side of the circuit chips with the contact areas of the circuit chips being left free, prior to the application of the circuit chips to the

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rewiring plate.

55. (Currently Amended) An electronic component comprising:

a multilayered rewiring plate;

a circuit chip carried on the rewiring plate, wherein the rewiring plate includes connecting means for connecting contact areas of the chip to external contacts of the electronic component via rewiring lines, the rewiring plate having at least one patterned, magnetic shielding layer made of an amorphous metal or an amorphous metal alloy, wherein the shielding layer has a plurality of stacked shielding films laminated one on top of the other.